Table B1. Detailed Costs of Remedial Alternative 2, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Monitored Natural Attenuation and Engineering and Institutional Controls

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Discontinue operation of the existing automated reagent injection system.*
- *Implement monitored natural attenuation until MCLs are achieved (59-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.2) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (59-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Site Closure and Demobilization					
Project Management	1	ls	$15,000	$15,000	All fees associated with management of construction related aspects of the project.
Well Abandonment	73	ea	$750	$54,750	Well abandonment in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decomissioning Policy.
Building Removal	1	ea	$50,000	$50,000	All fees for construction activities associated with removal of the treatment building.
Site Closure Labor	1	ea	$25,000	$25,000	Includes oversight labor for construction activities associated with decommissioning the remedial infrastructure.
Project Management/Regulatory Communications/Meetings	1	ls	$15,000	$15,000	All fees associated with internal communications and meetings associated with site closure and demobilization.
Two Years Post-Closure Groundwater Monitoring and Reporting	1	ls	$100,000	$100,000	Includes labor and laboratory analytical costs associated with two years of post-closure groundwater monitoring and reporting.
Subtotal Site Closure and Demobilization				**$260,000**	
SUBTOTAL CAPITAL COST				**$260,000**	
CAPITAL COST CONTINGENCY				**$52,000**	20% contingency.
TOTAL CAPITAL COST WITH CONTINGENCY ALTERNATIVE 2				**$312,000**	Rounded to the nearest 100.

Table B1. Detailed Costs of Remedial Alternative 2, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Monitored Natural Attenuation and Engineering and Institutional Controls

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Discontinue operation of the existing automated reagent injection system.*
- *Implement monitored natural attenuation until MCLs are achieved (59-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.2) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (59-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Annual Operation and Maintenance and Long-Term Activities					
Years 1 through 2 (Semi-Annual Monitoring and Reporting)					
Project Management	1	ls	$18,000	$18,000	Project management.
Engineering Controls/Institutional Controls Inspections and Certifications	1	ls	$7,500	$7,500	Annual site verification inspections and reporting by NYS PE.
Media Replacement	1	ls	$1,350	$1,350	Assumes GAC replacement at SP-5 once per year (years 1 through 21; Appendix A Table A-6).
Waste Management Costs	1	ls	$250	$250	Disposal of SP-5 spent GAC one per year (years 1 through 21; Appendix A Table A-6).
Performance Monitoring Labor	1	ls	$12,140	$12,140	Assumes semi-annual monitoring of water-levels, select groundwater monitoring wells, and surface water/spring water, and annual monitoring of select groundwater monitoring wells for costing purposes. Includes costs for equipment rental and supplies.
Laboratory Analytical	2	ls	$2,575	$5,150	Laboratory analytical for groundwater samples and SP-5 samples. Assumes semi-annual monitoring of 5 groundwater monitoring wells and 5 surface water/spring water locations, and annual monitoring of 12 groundwater monitoring wells for costing purposes.
Field Management and Data Evaluation	2	ls	$5,300	$10,600	Engineers estimate for management of field staff and data evaluation.
Reporting	1	ls	$8,500	$8,500	Engineers estimate for semi-annual reporting plus one annual report.
Contingency	10%	of	$63,490	$6,349	Contingency for OM&M.
Subtotal Annual OM&M and Long-Term Activities (Years 1 through 2)				**$69,900**	Rounded to the nearest 100.

Table B1. Detailed Costs of Remedial Alternative 2, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Monitored Natural Attenuation and Engineering and Institutional Controls

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Discontinue operation of the existing automated reagent injection system.*
- *Implement monitored natural attenuation until MCLs are achieved (59-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.2) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (59-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Years 3 through 7 (Annual Monitoring and Reporting)					
Project Management	1	ls	$12,000	$12,000	Project management.
Engineering Controls/Institutional Controls Inspections and Certifications	1	ls	$7,500	$7,500	Annual site verification inspections and reporting by NYS PE.
Media Replacement	1	ls	$1,350	$1,350	Assumes GAC replacement at SP-5 once per year (years 1 through 21; Appendix A Table A-6).
Waste Management Costs	1	ls	$250	$250	Disposal of SP-5 spent GAC one per year (years 1 through 21; Appendix A Table A-6).
Performance Monitoring Labor	1	ls	$7,620	$7,620	Assumes annual monitoring of water-levels and groundwater/surface water/spring for costing purposes. Includes costs for equipment rental and supplies.
Laboratory Analytical	1	ls	$4,265	$4,265	Laboratory analytical for groundwater samples and SP-5 samples. Assumes annual monitoring of 23 groundwater/surface water/spring water locations for costing purposes.
Field Management and Data Evaluation	1	ls	$7,900	$7,900	Engineers estimate for management of field staff and data evaluation.
Reporting	1	ls	$6,000	$6,000	Engineers estimate for annual reporting.
Contingency	10%	of	$46,885	$4,689	Contingency for OM&M.
Subtotal Annual OM&M and Long-Term Activities (Years 3 through 7)				**$51,600**	Rounded to the nearest 100.

Table B1. Detailed Costs of Remedial Alternative 2, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Monitored Natural Attenuation and Engineering and Institutional Controls

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Discontinue operation of the existing automated reagent injection system.*
- *Implement monitored natural attenuation until MCLs are achieved (59-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.2) until MCLs are achieved (59-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (59-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Years 8 through 59 (Bi-Annual Monitoring and Reporting)					
Project Management	1	ls	$3,000	$3,000	Project management.
Engineering Controls/Institutional Controls Inspections and Certifications	1	ls	$3,750	$3,750	Annual site verification inspections and reporting by NYS PE.
Media Replacement	1	ls	$338	$338	Assumes GAC replacement at SP-5 once per year (years 1 through 21; Appendix A Table A-6).
Waste Management Costs	1	ls	$63	$63	Disposal of SP-5 spent GAC one per year (years 1 through 21; Appendix A Table A-6).
Performance Monitoring Labor	1	ls	$3,810	$3,810	Assumes biennial water-levels and groundwater/surface water/spring water monitoring for costing purposes. Includes costs for equipment rental and supplies.
Laboratory Analytical	1	ls	$2,133	$2,133	Laboratory analytical for groundwater samples and SP-5 samples. Assumes biennial monitoring of 23 groundwater/surface water/spring water locations for costing purposes.
Field Management and Data Evaluation	1	ls	$3,950	$3,950	Engineers estimate for management of field staff and data evaluation.
Reporting	1	ls	$3,000	$3,000	Engineers estimate for bi-annual reporting.
Contingency	10%	of	$20,043	$2,004	Contingency for OM&M.
Subtotal Annual OM&M and Long-Term Activities (Years 8 through 59)				**$22,100**	Rounded to the nearest 100.
PRESENT WORTH OM&M AND LONG-TERM ACTIVITIES COST ALTERNATIVE 2				**$ 1,547,000**	Rounded to the nearest 100.
TOTAL COST ALTERNATIVE 2				**$ 1,859,000**	Rounded to the nearest 100.

Abbreviations:

ea	Each.
GAC	Granular activated carbon.
ls	Lump sum.
MCL	Maximum contaminant level.
NYS PE	New York State professional engineer.
OM&M	Operation, maintenance, and monitoring.

Table B2. Detailed Costs of Remedial Alternative 3, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Operation of the Existing Automated Reagent Injection System and Engineering and Institutional Controls:

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Operate the existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Site Closure and Demobilization					
Project Management	1	ls	$15,000	$15,000	All fees associated with management of construction related aspects of the project.
Well Abandonment	73	ea	$750	$54,750	Well abandonment in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decomissioning Policy.
Building Removal	1	ea	$50,000	$50,000	All fees for construction activities associated with removal of the treatment building.
Site Closure Labor	1	ea	$25,000	$25,000	Includes oversight labor for construction activities associated with decommissioning the remedial infrastructure.
Project Management/Regulatory Communications/Meetings	1	ls	$15,000	$15,000	All fees associated with internal communications and meetings associated with site closure and demobilization.
Two Years Post-Closure Groundwater Monitoring and Reporting	1	ls	$100,000	$100,000	Includes labor and laboratory analytical costs associated with two years of post-closure groundwater monitoring and reporting.
Subtotal Site Closure and Demobilization				**$260,000**	
SUBTOTAL CAPITAL COST				**$260,000**	
CAPITAL COST CONTINGENCY				**$52,000**	20% contingency.
TOTAL CAPITAL COST WITH CONTINGENCY ALTERNATIVE 3				**$312,000**	

Table B2. Detailed Costs of Remedial Alternative 3, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Operation of the Existing Automated Reagent Injection System and Engineering and Institutional Controls:

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Operate the existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Annual Operation and Maintenance and Long-Term Activities					
Years 1 through 37 (Semi-Annual Monitoring and Reporting)					
Project Management	1	ls	$24,000	$24,000	Project management.
Engineering Controls/Institutional Controls Inspections and Certifications	1	ls	$7,500	$7,500	Annual site verification inspections and reporting by NYS PE.
Media Replacement	1	ls	$673	$673	Assumes GAC replacement at SP-5 once per year (years 1 through 21; Appendix A Table A-6).
Waste Management Costs	1	ls	$135	$135	Disposal of SP-5 spent GAC one per year (years 1 through 21; Appendix A Table A-6).
Mol-Whey Injections	1	ls	$21,000	$21,000	Includes Baker tank rental, water deliveries, and Mol-Whey costs. Assumes injection every six months.
Mol-Whey Injection Labor	1	ls	$6,720	$6,720	Assumes injection every six months.
Mol-Why Injection Spare Parts	1	ls	$1,800	$1,800	Replacement of flow meters, pumps, etc.
Performance Monitoring Labor	2	ls	$4,520	$9,040	Assumes semi-annual monitoring of water-levels, select groundwater monitoring wells, and surface water/spring water, and annual monitoring of select groundwater monitoring wells for costing purposes. Completion of mol-whey injections every six months.
Equipment Replacement	1	ls	$1,500	$1,500	Replacement of flow meters, pumps, etc.
Utilities	1	ls	$5,800	$5,800	Includes electric, phone and internet utilities.
Laboratory Analytical	1	ls	$2,437	$2,437	Laboratory analytical for groundwater samples and SP-5 samples. Assumes semi-annual monitoring of 5 groundwater monitoring wells and 5 surface water/spring water location, and annual monitoring of 12 groundwater monitoring wells for costing purposes.
Field Management and Data Evaluation	2	ls	$5,300	$10,600	Engineers estimate for management of field staff and data evaluation.
Reporting	1	ls	$18,000	$18,000	Engineers estimate for semi-annual reporting plus one annual report.

Table B2. Detailed Costs of Remedial Alternative 3, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Operation of the Existing Automated Reagent Injection System and Engineering and Institutional Controls:

Includes:

- *Discontinue operation of the existing groundwater extraction system.*
- *Operate the existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Contingency	10%	of	$109,204	$10,920	Contingency for OM&M.
Subtotal Annual OM&M and Long-Term Activities (Years 1 through 37)				**$120,200**	Rounded to the nearest 100.
PRESENT WORTH OM&M AND LONG-TERM ACTIVITIES COST ALTERNATIVE 3				**$ 4,447,400**	Rounded to the nearest 100.
TOTAL COST ALTERNATIVE 3				**$ 4,759,400**	Rounded to nearest 100.

Abbreviations:

ea	Each.
GAC	Granular activated carbon.
ls	Lump sum.
MCL	Maximum contaminant level.
NYS PE	New York State professional engineer.
OM&M	Operation, maintenance, and monitoring.

Table B3. Detailed Costs of Remedial Alternative 4, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Continue Operation of Existing Remedy:

Includes:

- *Operate the existing groundwater extraction system and existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Site Closure and Demobilization					
Project Management	1	ls	$15,000	$15,000	All fees associated with management of construction related aspects of the project.
Well Abandonment	73	ea	$750	$54,750	Well abandonment in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decomissioning Policy.
Building Removal	1	ea	$50,000	$50,000	All fees for construction activities associated with removal of the treatment building.
Site Closure Labor	1	ea	$25,000	$25,000	Includes oversight labor for construction activities associated with decommissioning the remedial infrastructure.
Project Management/Regulatory Communications/Meetings	1	ls	$15,000	$15,000	All fees associated with internal communications and meetings associated with site closure and demobilization.
Two Years Post-Closure Groundwater Monitoring and Reporting	1	ls	$100,000	$100,000	Includes labor and laboratory analytical costs associated with two years of post-closure groundwater monitoring and reporting.
Subtotal Site Closure and Demobilization				**$260,000**	
SUBTOTAL CAPITAL COST				**$260,000**	
CAPITAL COST CONTINGENCY				**$52,000**	20% contingency.
TOTAL CAPITAL COST WITH CONTINGENCY ALTERNATIVE 4				**$312,000**	Rounded to the nearest 100.

Table B3. Detailed Costs of Remedial Alternative 4, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Continue Operation of Existing Remedy:

Includes:

- *Operate the existing groundwater extraction system and existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Annual Operation and Maintenance and Long-Term Activities					
Years 1 through 37 (Semi-Annual Monitoring and Reporting)					
Project Management	1	ls	$24,000	$24,000	Project management.
Engineering Controls/Institutional Controls Inspections and Certifications	1	ls	$7,500	$7,500	Annual site verification inspections and reporting by NYS PE.
Media Replacement	1	ls	$673	$673	Assumes GAC replacement at SP-5 once per year (years 1 through 21; Appendix A Table A-6).
Waste Management Costs	1	ls	$135	$135	Disposal of SP-5 spent GAC one per year (years 1 through 21; Appendix A Table A-6).
Mol-Whey Injections	1	ls	$21,000	$21,000	Includes Baker tank rental, water deliveries, and Mol-Whey costs. Assumes injection every six months.
Mol-Whey Injection Labor	1	ls	$6,720	$6,720	Assumes injection every six months.
Mol-Whey Injection Spare Parts	1	ls	$1,800	$1,800	Replacement of flow meters, pumps, etc.
Performance Monitoring Labor	2	ls	$4,520	$9,040	Assumes semi-annual monitoring of water-levels, select groundwater monitoring wells, and surface water/spring water, and annual monitoring of select groundwater monitoring wells for costing purposes.
Equipment Replacement	1	ls	$1,500	$1,500	Replacement of flow meters, pumps, etc.
Utilities	1	ls	$5,800	$5,800	Includes electric, phone and internet utilities.
Laboratory Analytical	1	ls	$3,187	$3,187	Laboratory analytical for groundwater samples, groundwater extraction system samples, and SP-5 samples. Assumes semi-annual monitoring of 5 groundwater monitoring wells, the groundwater extraction system and 5 surface water/spring water location, and annual monitoring of 12 groundwater monitoring wells for costing purposes.
Field Management and Data Evaluation	2	ls	$5,300	$10,600	Engineers estimate for management of field staff and data evaluation.
Reporting	1	ls	$22,000	$22,000	Engineers estimate for semi-annual reporting plus one annual report.
Groundwater Extraction System Maintenance Labor and Spare Parts	1	ls	$15,100	$15,100	Engineers estimate for groundwater extraction system maintenance and spare parts.

Table B3. Detailed Costs of Remedial Alternative 4, Focused Feasibility Study, Colesville Landfill, Colesville, New York.

Continue Operation of Existing Remedy:

Includes:

- *Operate the existing groundwater extraction system and existing automated reagent injection system until MCLs are achieved (37-Years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing engineering controls (Section 2.3.9) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Continue to implement existing institutional controls (Section 2.3.10) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement additional engineering and institutional controls (Sections 4 and 5.2.4) until MCLs are achieved (37-years; Refer to Table A-5, Appendix A).*
- *Implement revised long-term monitoring program until MCLs are achieved (37-years; Refer to Comments below).*

Description	Quantity	Units	Unit Cost ($)	Total Cost ($)	Comments
Contingency	10%	of	$129,054	$12,905	Contingency for OM&M.
Subtotal Annual OM&M and Long-Term Activities (Years 1 through 37)				**$142,000**	Rounded to the nearest 100.
PRESENT WORTH OM&M AND LONG-TERM ACTIVITIES COST ALTERNATIVE 4				**$ 5,254,000**	Rounded to the nearest 100.
TOTAL COST ALTERNATIVE 4				**$ 5,566,000**	Rounded to the nearest 100.

Abbreviations:

ea	Each.
GAC	Granular activated carbon.
ls	Lump sum.
MCL	Maximum contaminant level.
NYS PE	New York State professional engineer.
OM&M	Operation, maintenance, and monitoring.